

# Steam boilers improve efficiency of Paducah plant site

**Posted:** The Paducah Sun, Tuesday, November 24, 2015 12:24 AM

*Staff report*

As the deactivation of the U.S. Department of Energy's Paducah Gaseous Diffusion Plant continues, infrastructure improvements continue to be made to prepare the site for its changing needs in the future.

After evaluating current and future steam needs of the plant, and considering the age and cost of maintaining the existing coal-fired boilers along with environmental regulatory compliance needs and the cost of refurbishing the old boilers, the DOE decided to replace the three, larger coal-fired boilers with five modern, modular steam boilers.

According to the DOE, the change is designed to save energy and maintenance dollars that can be invested elsewhere.

"I am pleased we have been able to update the steam system at the site," said Jennifer Woodard, the Paducah Site Lead for DOE's Portsmouth/Paducah project office. "We have a responsibility to be a good steward of the environment and taxpayer dollars, and these boilers will help us uphold that responsibility."

The DOE's infrastructure improvements also included the recent consolidation of the site's four outdated and oversized electrical switchyards into a single switchyard providing a more efficient and sustainable supply of power.

The PGDP is a government-owned uranium enrichment plant that was constructed in the early 1950s and operated by DOE through the use of contractors. It manufactured enriched uranium for the fabrication of fuel assemblies for commercial and military nuclear reactors and weapons development activities.

In 1993, operational responsibility for uranium enrichment was transferred to the United States Enrichment Corp. USEC ceased its operations in May 2013 and returned the facilities to DOE control in October 2014.

The Paducah site is being deactivated in preparation for future decontamination and decommissioning. For more than 62 years, the PGDP operated the three massive coal-fired boilers capable of supplying 100,000 pounds of steam per hour for each boiler - enough to heat nearly 18,000 homes during the winter.

The new boilers, which operate on natural gas and fuel oil, have been tied into the existing steam distribution system. A package boiler system is housed in multiple semitrailers and operates to

provide steam on demand. The boilers are most efficient when they run at full capacity, according to the DOE.

When a boiler is turned down, the efficiency drops. To maximize efficiency, a series of five boilers were installed, allowing additional boilers to be added or removed as demand changes. The package boilers arrived at the site fully wired, equipped, and ready to tie into the site's steam distribution system.

The boilers are necessary to support future projects at the site, according to the DOE, such as removal of deposits in the plant piping left over from uranium enrichment operations. In addition to providing a reliable source of steam to implement site projects, the boilers will also provide heating for some office spaces during winter months.